INGESTIVE BEHAVIOR OF JERSEY HEIFERS FED CHITOSAN AND WHOLE RAW SOYBEANS

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The aim of this study was to evaluate the ingestive behavior in Jersey heifers supplemented with chitosan and whole raw soybeans. Eight animals with average body weight of 158.62 ± 1.75 kg were used in two 4x4 Latin squares, in 2x2 factorial arrangements. The experimental period was 18 days with 12 for adapting experimental diets, 6 for data collection, and 5 days of wash out. The experimental diets were: control (CON), chitosan (CHI, inclusion of 2.0% DM of chitosan), whole raw soybeans (WS, 16.3% of WS on diet DM), and chitosan + whole raw soybeans (CHI+WS). Diets were formulated to achieve an average daily gain of 700.0 g d^{-1}. All animals were submitted to a 24-hour period of visual observation for evaluation of the feeding behavior. The data collection to know the time spending in feeding, rumination and idleness activities was performed on day 20 of each period using a digital camera with night vision, handled by one observer during the period. The activity observations were recorded at five-minute intervals. The determination of the number of cud chews and time spent in the rumination of each ruminal bolus were assessed on the following day using a digital chronometer. Three ruminal boluses of each animal of the experiment were evaluated by observation, in three different periods of the day (between 10h00 and 12h00; from 14h00 to 16h000; and between 19h00 and 21h00). Data were submitted to analysis of variance using the PROC MIXED by SAS version 9.0. Heifers fed CHI showed longer eating period than CON, CHI and CHI+WS. Interaction effect was observed on standing and ruminating which was higher when heifers were fed chitosan associated with supplemental fat compared to CO or CHI, but did not differ of animals fed WS. Moreover, WS increased standing rest period. Chitosan decreased neutral detergent fiber on regurgited rumen bolus. Chitosan decreased DM and NDF eating efficiency. Likewise heifers fed CHI showed lower FDN chewing efficiency compared to the other treatments. Interaction effect was observed on DM rumination efficiency which was lower when heifers were fed chitosan associated with supplemental fat compared to CO or CHI, but did not differ of animals fed WS. Chitosan altering the time in which animals spend eating and chewing. The association of CHI and WS increased the period in which heifers ruminated stand and decreased the rumination efficiency of DM.

Keywords: additive, chitin, rumination.

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